Fenders.

Fig. 1.

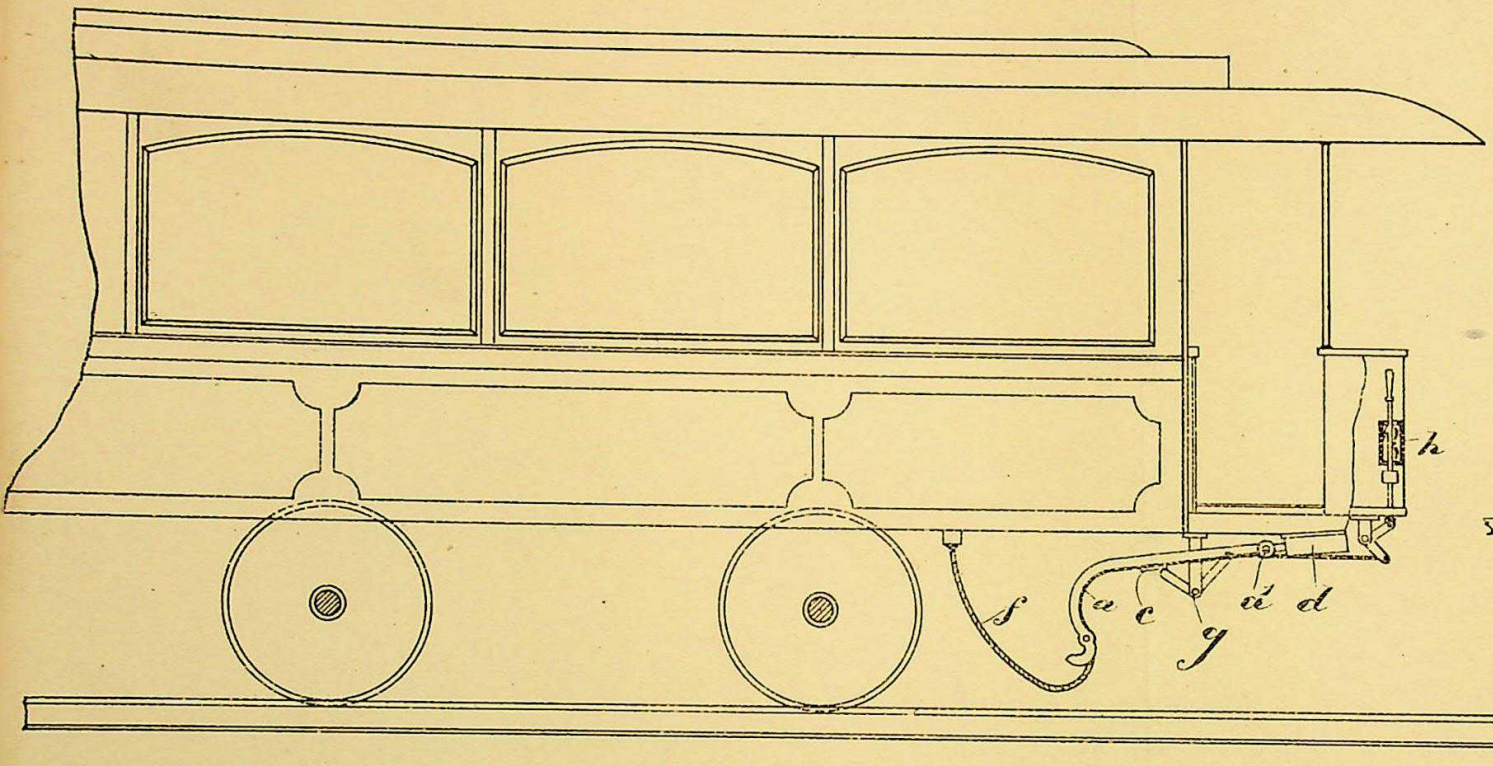


Fig. 2.

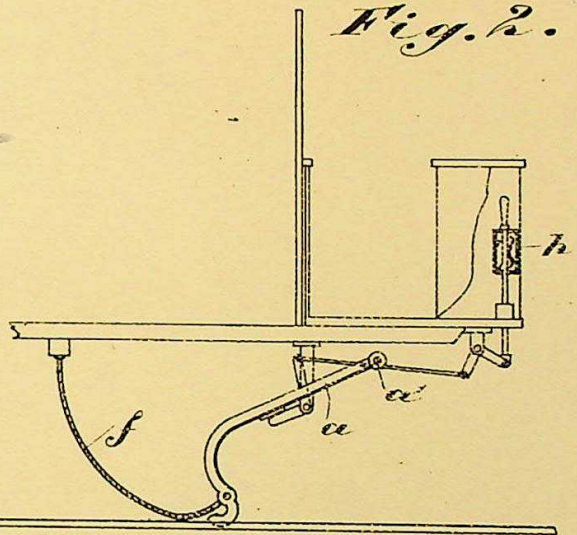
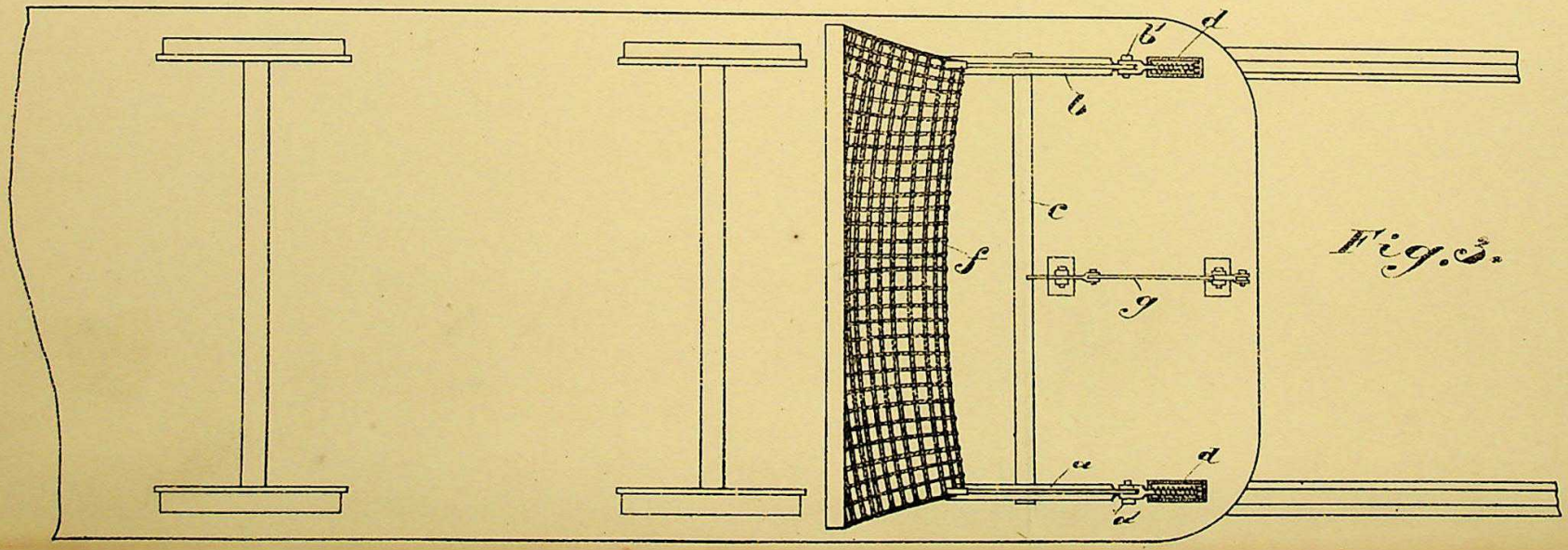


Fig. 3.



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DUPLICATE

Date of Application, 30th Jan., 1895
Complete Specification Left, 16th Oct., 1895—Accepted, 16th Nov., 1895

PROVISIONAL SPECIFICATION.

Improvements in Rail-clearing and Safety Appliances for Tramcars.

I, HANS HINRICH STÖLTING, of 36 Lornsenstrasse, Altona, Germany, Gentleman, do hereby declare the nature of this invention to be as follows :—

In consequence of the ever increasing extension of mechanical and electrical power propulsion for tramways, and of the accidents resulting therefrom, there is felt more and more the want of a suitable and reliable safety appliance. The rail clearers provided in front of railway locomotives have to be situated at a considerable height above the rails, in order that they shall not come in contact with the track and be destroyed by it when commencing to climb a rising gradient.

In consequence of the sharp curves on tramways, the wheel base is usually very short and therefore necessitates a much longer understructure for the front and hind portions of the car, so that a rail-clearer of the kind referred to would have to be situated considerably higher than is the case in railway locomotives, and would thus do more damage than it would be of use.

Now this invention relates to a rail-clearing device, with catching apparatus, that is arranged underneath the car as near as possible to and in front of the wheels, and which can therefore be situated and fixed within a very short distance of the rails, or can be made movable, as illustrated in the accompanying drawings.

The apparatus is illustrated in Figs. 1 & 2, in side elevation, and in Fig. 3 in plan, and consists of two hook-shaped hangers or drag-links *a* and *b*, which are connected together by means of a cross-piece *c*. These hangers oscillate in eye-bolts a^1 and b^1 which are elastically guided in casings *d* by means of springs, rubber buffers or the like. The hook-shaped ends of the hangers slide along on the rails. A net or catching cloth *f* attached to the car is connected to the hangers in such a manner as to slide over the track and catch up any article lying thereon. A net composed of strong ropes and made with wide meshes can advantageously be used, because a person who might happen to be lying on the track is able to hold on with his hands in the meshes, whilst small articles such as stones or the like, will fall through the same.

A suitable raising and lowering device *g*, *h* enables the rail-clearer to be raised during the journey as shewn in Fig. 1, and to be immediately dropped into the position shewn in Fig. 2 in case of need, even though a person should fall down directly in front of the car, or actually be knocked down by it. To prevent the hanging net from becoming entangled with any fixed obstacles, such as projecting stones on the track, and to diminish the sudden jerk exerted thereby upon the eye-bolts a^1 b^1 the latter are mounted in an elastic manner.

In the case of narrow gauges the hooked ends of the hangers or drag-links are bent inwards, or guard plates are fixed on the sides of the same in order to prevent any articles that have been pushed aside by the rail-clearers, from getting under the hind wheels.

Dated this 30th day of January 1895.

F. WISE HOWORTH,
46, Lincoln's Inn Fields, London, W.C., Agent for the Applicant.

[*Price* 8*d*.]

COMPLETE SPECIFICATION.

Improvements in Rail-clearing and Safety Appliances for Tramcars.

I, HANS HINRICH STÖLTING, of 36, Lornsenstrasse, Altona, Germany, Gentleman, do hereby declare the nature of this invention and in what manner the same is to be performed to be particularly described and ascertained in and by the following statement:—

In consequence of the ever increasing extension of mechanical and electrical power propulsion for tramways, and of the numerous accidents resulting therefrom, there is felt more and more, the want of a suitable and reliable safety-appliance. The rail-clearers heretofore provided in front of railway locomotives have to be situated at a considerable height above the rails, in order that they shall not come into contact with the track and be thereby destroyed when commencing to climb a rising gradient. In consequence of the sharp curves on tramways, the wheel-base is usually very short and therefore necessitates that the front and hind portions of the car project much further, so that a rail-clearer of the kind referred to would have to be situated considerably higher than is the case in railway locomotives, and would thus be more harmful than useful.

Now this invention relates to a rail-clearing device, with catching apparatus, that is arranged underneath the car as near as possible to, and in front of, the wheels, and which can be situated and fixed so as to be within a very short distance of the rails, or can be raised above the rails, as I will now proceed to explain by aid of the illustrative drawings filed with my Provisional Specification, wherein

Figs. 1 & 2 are side elevations and Fig. 3 a plan, showing the apparatus applied to a tramcar, Fig. 1 showing it in its inoperative position and Fig. 2 in its operative position.

It comprises two hook-shaped hangers or drag-links *a* and *b*, connected together by means of a crosspiece *c*. These hangers oscillate in eye-bolts a^1 and b^1 which are elastically guided in casings *d* by means of springs, india-rubber buffers, or the like. The hook-shaped ends of the hangers are adapted to slide along on the rails. A net or catching-cloth *f* attached to the car is connected to the hangers in such a manner as to slide over the track and catch up any article lying loose thereon. A net composed of strong ropes and made with wide meshes can advantageously be used because a person who might happen to be lying on the track would, after being caught in the net, be able to hold on with his hands in the meshes thereof, whilst small articles, such as stones, would fall through the same.

A suitable raising and lowering device *g*, *h* is provided to enable the rail-clearer to be raised during the journey into the position shown in Fig. 1, and to be immediately dropped into that shown in Fig. 2 in case of need—even if a person should fall down directly in front of the car, or actually be knocked down by it.

To prevent the hanging net from becoming entangled with or damaged by any fixed obstacles, such as projecting stones on the track, by diminishing the sudden jerk exerted thereby upon the eye-bolts a^1 b^1, these bolts are mounted in an elastic manner as hereinbefore described and shewn in the drawings.

In the case of narrow gauge tracks, the hooked ends of the hangers *a* *b* are bent inwards in a lateral direction, or guard-plates are fixed on the sides of the same, in order to prevent any articles that may have been pushed aside by the rail-clearers, from getting under the travelling wheels of the tramcar.

Having now particularly described and ascertained the nature of this invention and in what manner the same is to be performed I declare that what I claim is :—

1. A rail-clearing device with catching apparatus, comprising two hangers or drag-links *a b*, adapted to be attached to a tram car so as to be held over the track or the rails or to be lowered so as to slide along the said track or rails, and a drag-net or catching cloth *f* connected with the said hangers, substantially as hereinbefore described.

2. In a rail-clearing device of the kind specified in the preceding claim, mounting the hangers or drag-links in an elastic or yielding manner, substantially as hereinbefore described for the purpose set forth.

3. My improved tramcar-rail-clearing and safety appliance constructed arranged and operating as hereinbefore described with reference to and shown in the drawings referred to.

Dated this 16th day of October 1895.

F. WISE HOWORTH,
46, Lincoln's Inn Fields, London, W.C., Agent for the Applicant.

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